TMDL Implementation Plan
HUC 0307010114 - Little River and Big Indian Creek
August, 2003

Background

Hydrologic Unit Code 0307010114 is located in portions of Walton, Newton, Putnam, Jasper and Morgan counties and the cities of Social Circle, Rutledge, Newborn, Shady Dale, and Mansfield.

The stream segments of concern in this TMDL implementation plan include the Little River from its headwaters in Social Circle to the confluence with Nelson Creek and Big Indian Creek from I-20 to its confluence with Little Indian Creek. The primary jurisdictions that drain to the Little River are Social Circle and a small parts of Newton and Walton counties. The primary jurisdiction that drains to Big Indian Creek is part of Morgan County, along with a small part of Rutledge

The pollutant of concern is fecal coliform. Little River is listed as "not supporting" its use, and Big Indian Creek is listed as "partially supporting" its use.

The streams were listed on the Georgia 303(d) list of impaired water bodies after sampling events in 1999. A Total Maximum Daily Load was established by EPA for the entire Oconee River Basin in February, 2002, that recommends a reduction in the fecal coliform loading on the Little River of 59% and on Big Indian Creek of 73%.

Land use in the watershed is primarily forest and pasture. Residential and commercial uses dominate Social Circle in the Little River watershed

Input from stakeholders indicated the following information about the watershed:

- The EQIP program and the development of Nutrient Management Plans (NMP) are actively pursued in Morgan County. A goal of having most of the cattle farming operations using BMP's to minimize fecal loading is reasonable.

- Poultry farms usually have stack houses, NMP's, utilize advice on land application rates of chicken manure, and setbacks and buffers on streams. About 80% of farms comply with these BMP's, and education is continuing. Regulation of chicken litter distribution is expected soon.

- New rules on confined animal feeding operations (CAFO's) mandate a waste management plan and, for some, lagoons for treating waste. The rules were submitted for public review in November, 2002, and should become effective this year for a five-year period.

- It is not known how many illicit connections to storm drains, failed septic tanks, or cases of outright lack of treatment there may be in the basin. Social Circle,

Newton County, and Walton County do not have illicit discharge ordinances or stormwater ordinances, but are working on them. Morgan County has an illicit discharge ordinance. None of the jurisdictions have regulations regarding septic tank inspection for maintenance after installation.

- There are no local ordinances regulating the management of household pets or kennel waste.

Implementation

There are several on-going actions either in place or planned by the communities. Besides the agricultural initiatives mentioned above, some local governments are in the midst of changing their management of storm water runoff. These actions include the following.

Walton County has adopted, within the past year, new land development ordinances that include several items known to reduce fecal coliform runoff and pollution:

- A storm water management ordinance and revised sedimentation control ordinance.
- Increased stream buffers from 25 ft to 50 ft county wide and to 100 ft on streams in small water supply watersheds, including the Alcovy River.
- Detention facilities capable of treating runoff from all new development, based on the Georgia Stormwater Manual.
- Regulated design of parking lot islands to maximize infiltration and minimize runoff.
- Maximum impervious surface limitations in small water supply watersheds, including the Alcovy.

Newton County has adopted recently a new land development ordinance requiring 100-foot setbacks on all streams and 150-foot setbacks of impervious surfaces and septic tank drain fields.

The Metropolitan North Georgia Water District has adopted a suite of water quality ordinances for incorporation into a district water quality management plan. Walton County and Social Circle are within the District, and therefore will be adopting the ordinances within the time frame of this implementation plan. Ordinances include Post Development Storm Water Management, Floodplain Management, Open Space, Illicit Discharge and Illicit Connection, and Litter Control. The District will also adopt a strategy for implementation of required and recommended actions **http://www.northgeorgiawater.org**.

Walton County operates a Clean and Beautiful office, which is active in educating schools, civic groups, and the general public on water-quality related issues. The program sponsors an Adopt-a-Stream program.

It was the consensus of stakeholders that the specific sources of fecal coliform must be identified before action is required. Likely sources of fecal coliform identified were failed or absent septic tanks, leaking sewer lines, agricultural runoff, agricultural pollution from cattle with direct access to streams, pet and kennel discharges, and miscellaneous runoff from storm water from urbanized areas. The stakeholders recommended that the extent of the contribution from specific sources be identified before remedial action is advised.

The plan therefore identifies the following steps for load reduction:

- Continued implementation of recent and proposed ordinance adoptions and revisions.
- Detailed sampling of the streams to localize the sources of pollutant, beginning with a general survey and following on with more and more localized and detailed sampling until specific sources can be identified.
- Implementation of BMP's specific to the identified sources, including septic tank maintenance, sewer leak detection, Nutrient Management Plan implementation on the remaining agricultural operations, a kennel ordinance.
- The development of a storm water utility to fund BMP's for existing and future development was discussed by Walton County and Newton County, but not adopted as part of the plan at this time.
- Ongoing educational efforts will proceed under the auspices of Walton County, Morgan County, the NRCS, Agricultural Extension, and the City of Social Circle. These will include identifying and contacting "hobby farm" owners and educating them about stream buffers and limiting access; continued promotion of agricultural BMP's; distribution of brochures on septic tank maintenance; continuous activities of the Walton County Clean and Beautiful and Adopt-a-Stream programs involving citizens and the community.
- The effectiveness of the implementation plan should be evaluated after five years by incorporating the implementation activities that have taken place, updated land use information, and additional monitoring data into the BASINS model with which the TMDL was prepared.

Local Government Activities in the Lower Oconee Watershed

Codes: **E** = active/enforced **P** = planned **C** = considered **R** = rejected

	Walton Co.	Morgan Co.	Newton Co.	Social Circle
Ordinance/Regs				
Stormwater Ordinance	**P**	**E**	**P**	
Local Soil E & S Control	**E**	**E**	**E**	**E**
Illicit Discharge Ordinance		**E**	**P**	
Stream Buffer Ordinance	**E/ P**	**C**	**E**	
Impervious Surface Limits	**E**	**E**	**E**	
Septic Tank Maintenance		**E**		
Wetland Protection Ordinance	**P**	**E**	**E**	
Other Programs				
Active Sewer Leak Detection				**E**
Watershed Assessment Study				**E**
SWAP Study	**E**	**E**	**E**	**E**
Wildlife Habitat Incentive Program				
Greenspace Program				
Watershed Protection Plan	**E**	**E**	**E**	
River Corridor Protection				
Pollution Source Identification		**P**	**P**	**P**
Clean & Beautiful	**E**	**E**	**E**	
Nutrient Man. Program/Equip, etc.	**E**			
Stormwater Utility	**C**		**C**	

STATE OF GEORGIA
REVISED

TMDL IMPLEMENTATION PLAN
WATERSHED APPROACH
Oconee River Basin

Local Watershed Governments

Northeast Georgia RDC
Walton County
Newton County
Morgan County
City of Social Circle
City of Rutledge
City of Madison

TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. **With input from appropriate stakeholder groups, a TMDL Implementation Plan has been developed for a cluster of impaired streams and the corresponding pollutants.** The impaired streams are located in the same sub-basin identified by a HUC10 code (Figure 1).

This Implementation Plan addresses an action plan, education/outreach activities, stakeholders, pollutant sources, and potential funding sources affecting the sub-basin. In addition, the Plan describes (a) regulatory and voluntary practices/control actions (*management measures*) to reduce target pollutants, (b) milestone schedules to show the development of the management measures (*measurable milestones*), (c) a monitoring plan to determine the efficiency of the management measures and measurable milestones, and (d) criteria to determine whether substantial progress is being made towards reducing pollutants in impaired waterbodies. The overall goal of the Plan is to define a set of actions that will help achieve water quality standards in the state of Georgia. Following this section is information regarding individual segments.

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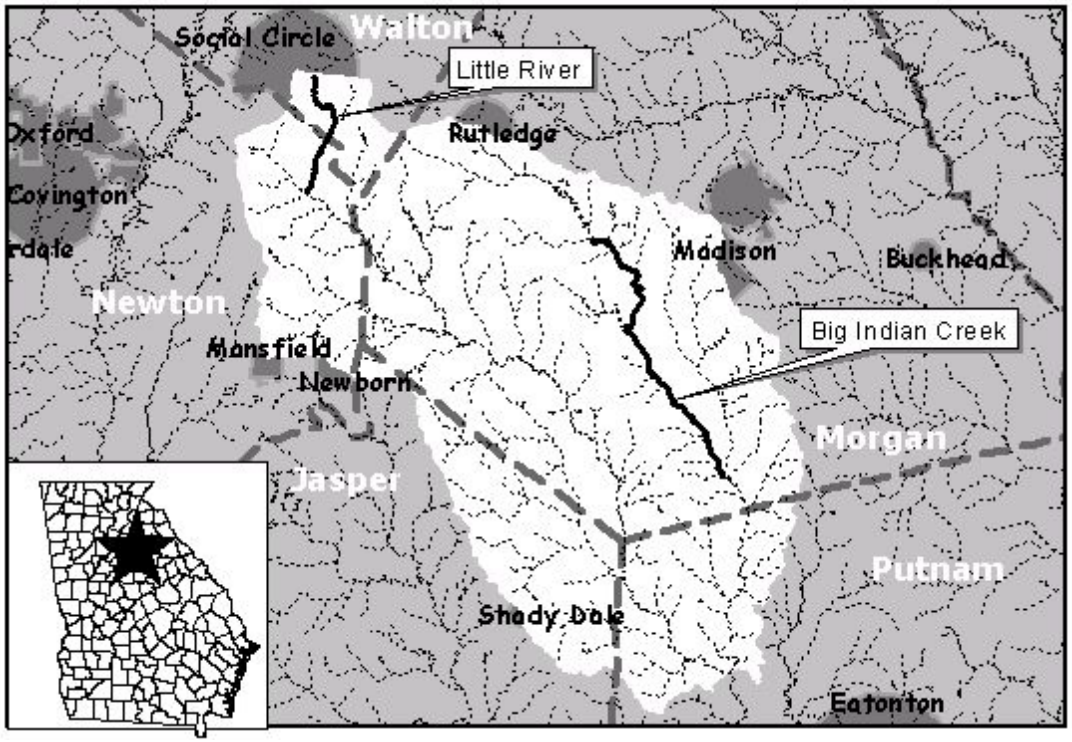

FIGURE 1

Impaired Waterbody*	Impaired Stream Location	Impairment
1. Big Indian Creek	I-20 to Little Indian Creek	Fecal Coliform
2. Little River	Social Circle to Nelson Creek	Fecal Coliform

*These Waterbody Numbers are referenced throughout the Implementation Plan.

Action Plan for Big Indian Creek Watershed

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POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
__ Dissolved Oxygen (DO)	__ Industrial	__ Habitat		
X Fecal Coliform (FC)	X Urban	X Recreation		
__ Sediment	X Agriculture	__ Drinking Water		
__ Metals	__ Forestry	__ Aesthetics		
__ Fish Consumption Guidelines (FCG)	X Residential	__ Other (Please List)		
__ Other (Please List)	__ Other (Please List)			

INFORMATION/EDUCATION/OUTREACH ACTIVITIES

An education/outreach component will be used to enhance public understanding of and participation in implementing the TMDL Implementation Plan.
List of all previous and planned information/education/outreach activities.

Responsible Organization Or Entity	Description	Impacted Waterbodies*	Target Audience	Anticipated Dates (MM/YY)
Natural Resource Conservation Service (NRCS) and Cooperative Extension Service	Provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment	1,2	Private land owners	Continuous
Walton County and Newton County Clean & Beautiful	Provides educational programs on water quality for the public and schools in Walton County. Promotes Adopt-a-Stream program	1,2	Schools, civic groups, public	Continuous
Walton Soil and Water Conservation District	Has ongoing programs to educate property owners about best management practices; reviews soil erosion & sedimentation plans	1,2	Developers, private land owners	Continuous
NEGRDC Water Resources	Distributing ACCG/DCA Water Resources Toolkit CD-ROM	1,2	Public, local governments	Ongoing
Morgan, Walton, and Newton County Health Departments; Social Circle Water and Sewer Department	Provide education on proper maintenance of septic tanks.	1,2	Residential owners of septic tank systems	Ongoing

STAKEHOLDERS

EPD encourages public involvement and the active participation of stakeholders in the process of improving water quality. Stakeholders can provide valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

List of local governments, agricultural organizations or significant landholders, commercial forestry organizations, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

Name/Organization	Address	City	State	Zip	Phone	E-Mail
David Bennett/ Walton SWCD	c/o Walton EMC, PO Box 260	Monroe	GA	30655	770-267-6253	
William L Brown/Walton SWCD	1669 Pleasant Valley Rd. NE	Monroe	GA	30655	770-267-5192	
William Carlan/Walton Coop Ext Ser.	PO Box 151	Monroe	GA	30655		
Bob Cowan/Walton Planning & Development	126 Court St, Annex 1	Monroe	GA	30655	770-267-1485	
Clifton Harrison/Walton SWCD	1189 Criswell Rd SE	Monroe	GA	30655		
George N Malcom/Walton SWCD	1210 Pleasant Valley Rd	Monroe	GA	30655		
Jose Pagan/NRCS	PO Box 8	Monroe	GA	30655	770-267-8363	
John H Redding/Walton SWCD	713 East Spring St, PO Box 409	Monroe	GA	30655	770-267-5283	
Jackie Smith/Newton Board of Commissioners	1113 Usher St NE	Covington	GA	30014	770-784-2000	
Ray Spencer/NRCS	205 E. Jefferson St	Madison	GA	30650	800-593-3192	
Roy L. Varner/Upper Ocmul SWCD	11093 Hwy 36	Covington	GA	30209	770-786-3667	
Aaron Varner/Newton Board of Commissioners	1113 Usher St NE	Covington	GA	30014	770-784-2000	
Ricky Wheeler/Newton Coop Ext Ser.	2186 Elm St	Covington	GA	30014	770-784-2010	
Julie ToddGA-EPD	4220 International Pkwy, Ste 101	Atlanta	GA	30354	404-675-1651	
Morgan County Planning Department	384 Hancock Street	Madison	GA	30650	(706)342-4373	
Morgan County Cooperative Extension Service	440 Hancock Street	Madison	GA	30650	(706)342-2214	
NRCS Morgan County	205 East Jefferson Street	Madison	GA	30650	(800)593-3192	

WATER BODIES/STREAMS COVERED IN THIS PLAN:

These impaired streams are located in the same sub-basin identified by a HUC10 code. Most of the information contained in this section comes from the 303(d) list and has been completed by employees of the EPD Water Protection Branch. Data that placed stream on 303(d) list will be provided upon request.

Waterbody Name #1	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Big Indian Creek	I-20 to Little Indian Creek	11	Fishing	Partially Supporting
Primary County	**Secondary County**	**Second RDC**		**Source (Point/ Nonpoint)**
Morgan				Nonpoint
Pollutants	**Water Quality Standards**	**Required Reduction**	**TMDL ID**	**Date TMDL Established**
Fecal Coliform	1,000 per 100 ml (geometric mean Nov-April) 200 per 100 ml (geometric mean May-Oct)	73%		February 2002

Waterbody Name #2	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Little River	Social Circle to Nelson Creek	3	Fishing	Not Supporting
Primary County	**Secondary County**	**Second RDC**		**Source (Point/ Nonpoint)**
Walton	Newton			Nonpoint (Urban Runoff)
Pollutants	**Water Quality Standards**	**Required Reduction**	**TMDL ID**	**Date TMDL Established**
Fecal Coliform	1,000 per 100 ml (geometric mean Nov-April) 200 per 100 ml (geometric mean May-Oct)	59%		February 2002

POLLUTANT SOURCES

It is important to recognize the potential source(s) causing water quality impairment. Each source must be controlled to comply with target TMDL/Load Allocations for each pollutant. Included is a description of how the sources contribute to the impairment and the waterbody that is impaired.

List of major nonpoint source categories and sub-categories or individual sources (Urban Runoff, Agriculture, Forestry, Municipal Sewage Treatment Plant)

Pollutant	Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
Fecal coliform	Agriculture	Cattle with direct access to streams, high impact areas with runoff directly connected to streams.	1,2
Fecal coliform	Urban/Residential	Leaking or damaged sewer lines, urban runoff, storm sewers, illicit discharges, leaking or failed septic tanks	1,2

MANAGEMENT MEASURES, MEASURABLE MILESTONES AND SCHEDULE

(i.e. Local codes and ordinances, Erosion and Sedimentation Control, Storm Water Management, Local water resource monitoring)

The following table lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the pollutant and the waterbody for which the TMDL was written. A description is provided of how these management measures are/will be accomplished through reliable and effective delivery mechanisms, and how these management measures are/will help achieve the target TMDL. Included is the source of the pollutant, anticipated/past effectiveness of the management measure (very effective, somewhat effective, not effective), the current status (i.e. enforced, in-progress, planning), and measurable milestones and schedule. Milestones are used to measure progress in attaining water quality standards and to determine whether management measures are being implemented.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
NRCS and Ag Extension BMPs	NRCS, USDA	Education about, and cost-shared implementation of agricultural BMPs to minimize introduction of fecal material to streams	Ongoing	In progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Agriculture	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Measure percent of animals in watershed restricted from direct access and under a nutrient management plan	2003	2007	Expectation is that 10-20% of current cattle population is under management plans in 2003, 40% of current population will be under NMP by 2007, and 50% of current population will be removed from the watershed by 2007.

Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Enhanced development ordinance and storm water ordinance	Walton County, Newton County	Incorporates wider buffers, impervious surface limits, requires detention facilities, parking lot design standards, et al. Imposes storm water detention facilities on most new development.	Present/Ongoing	Enforced and planning	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Urban runoff	1	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
All new development will be regulated	Previous	Ongoing	Acres under development must be recorded and data maintained.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Targeted sampling	Walton County, Newton County, Morgan County, Social Circle	Use E. coli or fecal coliform sampling scheme to identify specific sources	2004/2005	Planned	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness

Measurable Milestones	Schedule		Comments
	Start	End	
Survey sampling of the streams and their tributaries	2004	2005	Preliminary geographic coverage to identify tributaries or reaches of concern
Detailed sampling of streams and tributaries	2004	2005	Detailed geographic coverage of tributaries and reaches of concern to identify specific sources

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Oconee River Basin Management Plan	Georgia EPD	Detailed management plan for the Oconee River Basin. The purpose of the plan is to develop and implement a river basin planning program to protect, enhance, and restore waters for the State of Georgia, which will provide for effective monitoring, allocation, use, regulation, and management of water resources.	Existing	To be revised 2003	Regulatory/ Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Multiple	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
• Prepare/Update Draft River Basin Plan	2002	2003	Plan revision due in 2003.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Water Quality Control Act (OCGA 12-5-20)	GA DNR EPD	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats	1964	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Fecal coliform	Multiple	1,2	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
EPD acts on complaints from affected parties	Ongoing	Ongoing	
Detailed sampling of streams and tributaries	2003	2004	Detailed geographic coverage of tributaries and reaches of concern to identify specific sources

POTENTIAL FUNDING SOURCES The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

Funding Source	Responsible Authority	Status	Anticipated Funding Amount	Impacted Waterbodies*
Section 319(h) of the Clean Water Act	EPD/State of Georgia	Must Apply	N/A	1,2
Environmental Quality Incentive Program	NRCS	Must Apply	N/A	1.2
Conservation Reserve Program	NRCS (Farm Service Agency)	Must Apply	N/A	1,2
Watershed Surveys and Planning	NRCS	Must Apply	N/A	1,2
Conservation Technical Assistance	NRCS	Must Apply	N/A	1,2
Conservation Buffer Initiative	NRCS	Must Apply	N/A	1,2
Section 604(b) of the Clean Water Act	EPD via RDC	Must Apply	N/A	1,2
Community Development Block Grant	Social Circle, DCA	Must Apply	N/A	1,2

MONITORING PLAN

The purpose of this monitoring plan is to determine the effectiveness of the target TMDL and the management measures being implemented to meet water quality standards. List of previous, current or planned/proposed sampling activities or other surveys. (Monitoring data that placed stream on 303(d) list will be provided if requested.)

Name Of Regulation / Ordinance Or Management Measure	Organization	Impacted Waterbodies*	Pollutants	Purpose/Description	Time Frame		Status (Previous, Current, Proposed)
					Start	End	
TMDL Evaluation	EPD	1,2	Fecal coliform	Monitoring data for Georgia 305(b)/303(d) List	1999	1999	Previous
TMDL Monitoring	EPD	1,2	Fecal coliform	Monitoring data for Georgia 305(b)/303(d) List	2004	2004	Proposed
Targeted Sampling	Walton, Newton, Morgan counties; Social Circle, NEGRDC	1,2	Fecal coliform	E. coli sampling to identify specific sources	2004	2005	Proposed

CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE

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The following set of criteria will be used to determine whether any substantial progress is being made towards reducing pollutants in impaired waterbodies and attaining water quality standards. Discussion on each criteria is recorded in the space provided. Additional relevant criteria are presented in comments.

Percent of concentration or load change (monitoring program)

By 2008 (five years), fecal coliform TMDL in the Little River should be reduced 50% and in Big Indian Creek reduced to acceptable levels.

If monitoring results show that it is unlikely that the TMDL will be adequate to meet water quality standards, revision of the TMDL may be necessary.

- Categorical change in classification of the stream (delisting the stream is the goal)

By 2008, Little River should be classified at least as "partially supporting" its designated use, and Big Indian Creek should be listed as "supporting" its designated use.

- Regulatory controls or activities installed (ordinances, laws)

All new ordinances and BMP programs should be enacted or in progress by 2008. All new development will comply with regulations and BMP's.

- Best management practices installed (agricultural, forestry, urban)

Existing agricultural BMP's, plus additional installed BMP', in combination with the replacement of agriculture with residential and commercial development, is expected to result in 80% of active agricultural enterprises using recommended BMP's by 2008.

COMMENTS

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Environmental Protection Division of the Department of Natural Resources, State of Georgia.